

anodizing said substrate to form an anodization layer; and
depositing a boron carbide layer upon said anodization layer.

2. (Already Amended) The method of Claim 1, wherein said depositing step comprises thermal spraying to form said boron carbide layer upon said surface.

3. (Already Amended) The method of Claim 1, wherein said depositing step comprises chemical vapor deposition.

8. (Already Amended) The method of Claim 1, wherein said boron carbide layer comprises B_4C .

9. (Already Amended) The method of Claim 1, wherein said boron carbide layer comprises particles of B_4C .

10. (Already Amended) The method of Claim 1, wherein said boron carbide layer comprises a composition between B_4C and $B_{13}C_3$.

11. (Already Amended) The method of Claim 1, wherein said boron carbide layer comprises between 14 to 30 wt% of carbon relative to a total weight of carbon and boron.

12. (Already Amended) The structure of Claim 11, wherein said boron carbide layer comprises between 18 to 25 wt% of carbon relative to a total weight of carbon and boron.

13. (Already Amended) A method of forming a boron carbide layer on an aluminum-based substrate, comprising:

anodizing a surface of an aluminum-based substrate to form an anodization layer; and

then depositing a boron carbide layer upon said anodization layer.

14. (Already Amended) The method of Claim 13, wherein said depositing step comprises thermal spraying.

15. (Already Amended) The method of Claim 13, wherein said depositing step comprises chemical vapor deposition.

16. (Already Amended) The method of Claim 13, further comprising the step, performed prior to said anodizing step, of roughening at least a first portion of said surface of said aluminum-based substrate and wherein said anodizing step anodizes said first portion and said depositing step deposits said boron carbide layer on said anodization layer overlying said anodized first portion.

C 5 17. (Twice Amended) The method of Claim 16, further comprising removing said anodization layer from a second portion of said substrate adjacent to said first portion and separated therefrom by a predetermined boundary, said roughened first portion extending below a portion of said anodization left by said removing step.

18. (Already Amended) The method of Claim 16, wherein a material of said substrate is selected from the group consisting of aluminum and aluminum alloys.

19. (Already Amended) The method of Claim 16, wherein said boron carbide layer comprises B_4C .

20. (Already Amended) The method of Claim 16, wherein said boron carbide layer comprises particles of B_4C .

21. (Already Amended) The method of Claim 16, wherein said boron carbide layer comprises a composition between B_4C and $B_{13}C_3$.

22. (Already Amended) The method of Claim 16, wherein said boron carbide layer comprises between 14 to 30 wt% of carbon relative to a total weight of carbon and boron.

23. (Already Amended) The structure of Claim 22, wherein said boron carbide layer comprises between 18 to 25 wt% of carbon relative to a total weight of carbon and boron.

C2 28. (Amended) The structure of Claim 1, wherein said roughening step is performed before said anodizing step.

C2 29. (Amended) The structure of Claim 1, further comprising removing said anodization layer from only a first portion and not from a second portion of said surface of said substrate, wherein said boron carbide layer is deposited on both said first and second portions after said removing step.

30. (Amended) The process of Claim 17, wherein said boron carbide layer is deposited onto said anodized first portion and second portion of said substrate.

C3 31. (New) The process of Claim 13, further comprising the step performed between said anodizing and depositing steps of removing said anodization layer from a first portion of said substrate separated by a predetermined boundary from a second portion of said substrate from which said anodization layer is not removed, and

C3 wherein said depositing step deposits said boron carbide layer in a layer extending over said first portion of said substrate and across said boundary to a neighboring part of said second portion of said substrate.

32. (New) The process of Claim 13, further comprising the step performed prior to said anodizing step of roughening a third portion of said substrate including a part of said first portion of said substrate and extending across said boundary to said neighboring part of said second portion of said substrate.

3
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33. (New) The process of Claim 32, wherein a further part of said first portion of said substrate is not roughened and wherein said depositing step deposits said boron carbide layer over said further part.